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Carolina and the eastern portions of Kentucky and Tennessee, will be completed and the results at once submitted to a careful discussion, with the view of ascertaining what improvements, if any, are needed in the methods of work, to bring out all of the practical and scientific purposes of a magnetic survey.

The work in Louisiana was done in cooperation with the State Geological Survey.

B. Ocean Survey Work.—In January, 1903, a Lloyd-Creek dip circle was mounted on the Coast and Geodetic Survey Steamer *Blake* and observations made on the trip to Porto Rico and return. Some compass work has also been done by the other vessels of the survey. The work has largely been of an experimental nature as yet. It has been demonstrated, however, that if the proper precautions are taken, valuable results may be secured. The Lloyd-Creek dip circle has been proved to be a most satisfactory instrument for both land and sea work.

C. Magnetic Observatory Work.—The four magnetic observatories situated at Cheltenham (Maryland), Baldwin (Kansas), Sitka (Alaska) and near Honolulu (Hawaiian Islands) have been in continuous operation throughout the year. Owing to various improvements being made in the vertical-force instrument, only the first-named observatory is provided with such an instrument, and, in fact, at this observatory a double set of photographic instruments are in operation (Adie pattern and Eschenhagen pattern).

In February, 1903, a temporary magnetic observatory was established in Fort Isabel, Bieques Island, Porto Rico, and since March registrations of declination and horizontal intensity have been secured.

D. Special Investigations.—A variety of special investigations have been made, embracing experimental work in the field and at the observatories and theoretical investigations at the office. Thus, for example, a preliminary examination was made of the locally disturbed region in the vicinity of Machinac straits, some magnetic observations having been made on the ice during the past winter, in addition to some shore observations.

E. Expeditions.—Besides the work of the survey proper, two expeditions have been fitted out with magnetic instruments and the observers given the necessary training and furnished with the requisite data and instructions; viz., the Zeigler North Polar Expedition, W. J. Peters being in charge of the magnetic work and the Bahama Expedition of the Baltimore Geographic Society, O. L. Fassig being in charge of the magnetic work.

F. Publications.—1. 'United States Magnetic Declination Tables for 1902, and Principal Facts Relating to the Earth's Magnetism.' By L. A. Bauer, Washington, 1902. (Special Publication of which a second edition is now passing through the press.)

2. 'The Magnetic Observatories of the United States Coast and Geodetic Survey in Operation on July 1, 1902.' By L. A. Bauer and J. A. Fleming. Appendix 5, Report of the Superintendent (O. H. Tittmann) of U. S. Coast and Geodetic Survey for 1902.

3. 'Magnetic Dip and Intensity Observations, January, 1897, to June 30, 1902, by D. L. Hazard.' Appendix 6, Report of the Superintendent (O. H. Tittmann) of the Coast and Geodetic Survey for 1902.

4. 'Results of International Magnetic Observations made during the Total Solar Eclipse of May 18, 1901, including Results obtained during Previous Total Solar Eclipses.' By L. A. Bauer. Published in *Terrestrial Magnetism*, December, 1902.

SCIENTIFIC NOTES AND NEWS.

DR. E. B. WILSON, professor of zoology at Columbia University, has been elected a member of the Accademia dei Lincei, Rome.

CAPTAIN R. E. PEARY has obtained three years' leave of absence from the Navy Department, with a view to conducting another Arctic expedition. It is reported that Mr. Morris K. Jesup is taking an interest in securing the funds required, which are estimated at from \$200,000 to \$250,000.

MR. ADOLF F. BANDELIER and Mrs. Bandelier arrived in New York on September 1, after an absence of eleven years in Peru and Bolivia. Mr. Bandelier was sent to South America by

the late Mr. Henry Villard to carry on archaeological work, and was later in the employ of the American Museum of Natural History. The extensive archeological collections from Peru and Bolivia in the museum are largely the result of his industry.

DR. WILLIAM J. HOLLAND, director of the Carnegie Museum of Pittsburg, has returned to the United States with the important paleontological collections of Baron de Briet, the acquisition of which by the Carnegie Museum we were recently able to announce.

PROFESSOR HENRY F. OSBORN, of Columbia University and the American Museum of Natural History, has been visiting the camps in Wyoming and elsewhere, where paleontological excavations are in progress for the American Museum.

DR. ROBERT KOCH has secured further leave of absence in order to continue his work in Bulawayo until January next.

DR. W. G. TIGHT, president of the University of New Mexico, and Miss Annie Peck, with two Swiss guides, are reported by the daily papers to have ascended Mount Sorata in Bolivia, one of the highest peaks of the Andes, said not to have been hitherto ascended.

The American Geologist states that Dr. Ralph Arnold, assistant in geology at Stanford University, has been appointed assistant to Dr. Dall, of the U. S. Geological Survey.

DR. J. F. BIEHM has been appointed assistant bacteriologist in the Chicago Department of Health.

MR. S. R. BURCH, chief clerk of the Bureau of Animal Industry, has been appointed chief clerk of the Department of Agriculture, succeeding Mr. Andrew Geddes.

DR. WILLIAM A. WHITE, of the Binghamton State Hospital of New York, has been appointed superintendent of the Government Hospital for the Insane at Washington, succeeding the late Dr. Alonzo B. Richardson.

MR. R. FOX SYMONS has been appointed inspector general of health for the Transvaal.

THE Enno Sands prize medal for 1903 has been awarded by the Association of Medical

Surgeons of the United States to Major Frederick Smith of the British Royal Army Medical Corps.

A TABLET in honor of the eminent anatomist, Xavier Bichat, has been erected in the college at Nanthua which he attended.

PROFESSOR W. H. CORFIELD, who held the chair of hygiene in University College, London, and was well known for his contributions to sanitary subjects, died on August 26, at the age of fifty-nine years.

DR. SIMON SUBIC, associate professor of physics at the University of Gratz, died on July 27, at the age of seventy-three years.

THE Iron and Steel Institute of Great Britain, which closed its autumn meeting at Barrow-in-Furnace on September 3, has accepted an invitation to meet in the United States in the autumn of next year.

FOREIGN papers state that a resolution was passed at the conclusion of the recent geodetic congress at Amsterdam requesting the various nations to carry out extensive measurements of gravity from the Atlantic towards the east through the lowlands of Europe and Asia, as well as in the plateau around Thibet. A clear conception of the variations of weight and of the distribution of bulk in the crust of the earth would be gained thereby in connection with astronomical determinations of longitude and latitude.

THE Eleventh International Congress of Hygiene and Demography will be held at Brussels from September 2 to September 8, under the patronage of the King of the Belgians and the honorary presidency of Prince Albert. The president is Mr. M. E. Beco, general secretary of the ministry of agriculture; the general secretary, Dr. Felix Putzeys, professor in the medical faculty of the University of Liège.

DR. O. P. HAY has recently returned from a collecting trip in the Bridger deposits of southwestern Wyoming in the interests of the American Museum of Natural History. He spent there seven weeks, engaged especially in collecting fossil turtles, the others of the party being engaged in collecting remains of prim-

itive horses, monkeys and uinatheres. Altogether, there were secured over one hundred and thirty specimens of turtles. Some of these were more or less fragmentary, but there were found many complete shells and, in addition, seven skulls. These specimens will serve to throw light on the Eocene turtles, since many of the species were originally based on defective materials. Hitherto, skulls of the Bridger species have been almost wholly unknown. Of interesting genera whose skulls were obtained this summer may be mentioned *Baëna* and *Plastomenus*. The materials which were secured are to be employed in the preparation of a monograph of the fossil turtles of North America, for the Carnegie Institution.

THE expedition which left Seattle on June 30, on the Fish Commission steamer *Albatross* to investigate the salmon fisheries of Alaska is expected to return on the fifteenth of the present month. President David Starr Jordan, head of the commission, returned to Stanford University some time since. Among other members of Stanford University on the expedition were Messrs. C. H. Gilbert, Harold Heath, H. M. Spaulding and D. R. Rutter.

THE Canadian government steamer *Nep-tune* sailed on August 22 from Halifax for Hudson Bay and Arctic waters on an expedition lasting a year and a half with a view to botanical, geological and natural history investigations. The party will take formal possession of the Arctic Islands and the shore of Baffin's Bay.

It is announced that the relief ship *Frithjof*, of the Swedish Antarctic Expedition, will be fitted with wireless telegraphy in order that it may remain in communication with gunboat *Uruguay* sent by the Argentine government. Baron Klinckowström accompanies the relief expedition as zoologist.

MR. ANDREW CARNEGIE has under the usual conditions offered to give £6,000 for a library building at Peterborough and £7,000 for a library building at Erith, Kent.

MR. EDWARD D. ADAMS has given to the American Museum of Natural History a specimen of radium, which has been placed on exhibition.

Nature states that a general exhibition arranged by the Central Association of Inventors, of Bayreuth, for the purpose of facilitating the sale of patents and copyrighted patterns is to be held during September and October next at Nuremberg. There are, it is stated, more than 200,000 copyrighted patterns in Germany and more than 140,000 patents, but one half of these are not in public use, the reason being that the inventors are not able to exploit their inventions. It was because of this that the Central Association came into being some years ago. Its purpose is to assist the members to make their inventions profitable to themselves, the majority of inventors not having the means to do so. The association furnishes space to inventors without means free of cost, and charges no fees for effecting a sale.

The British Medical Journal states that in the Germanic Museum at Nuremberg there has recently been placed a large medico-historical collection of medals. A considerable number of them were purchased at a sale held not long ago at Amsterdam.

ACCORDING to the *Journal of the American Medical Association* the Germans are planning to make an elaborate exhibit at the St. Louis Exposition of everything connected with medical instruction, especially in respect to diagnostics and therapeutics. Professor v. Bergmann is in charge of the matter, assisted by a committee, which includes Drs. Kutner, Kraus, Mikulicz, Orth, Rubner, Waldeyer, Wassermann and others, nearly all of Berlin. A circular inviting cooperation is to be sent forthwith to all the prominent institutes and firms throughout Germany.

A PRESS despatch from Simla, India, states that the Irrigation Commission has issued its report. It proposes to lay out \$150,000,000 in twenty years on protective works, and also \$2,000,000 annually in loans for private irrigation works, the necessary funds to be raised by loans, and the interest thereon to be charged to the famine grant.

ON the initiative of the director of the St. Petersburg Institute of Experimental Medi-

cine a Russian Microbiological Society is being organized.

SIR THOMAS HANBURY has purchased and presented to the Royal Horticultural Society the estate and garden of the late Mr. G. F. Wilson, F.R.S., at Wisley, near Woking.

WE quoted from the London *Times* some time since a statement that Sir William and Lady Huggins had contributed a paper to the Royal Society not then published containing the announcement of the discovery of lines of helium in the light emitted by radium. It was discovered subsequently that the lines were of nitrogen, and this result was added to the paper before publication. Sir Michael Foster thus explains the matter in the London *Times*. In mid July, during the recess, the Royal Society received (the officially recorded date is July 17) from the President, Sir W. Huggins, a short communication stating that by long exposure he had been able to obtain from the glow of radium at the ordinary temperature a photographic record of bright lines in the blue, violet and ultra-violet regions of the spectrum, and that several of these lines coincided with those of helium, but not with the most characteristic ones. A paper of such importance was sent at once to the society's printers with a view to its being published as early as possible. Within a few days, however, continued observations convinced Sir W. Huggins that the lines in question were those not of helium, but of nitrogen. Having arrived at this conclusion, he might have wished to withdraw the paper which he had sent in, replacing it by a wholly new one. He preferred to let the former paper stand as written, and to communicate the new results in the form of a dated addendum. The addition was printed as received on August 5, and the whole paper was published on August 15. In pursuing this course, the president followed the usual customs of the society, and, in my humble opinion, chose the better way, since a knowledge of the several steps through which an important result is reached is second only in value to the knowledge of the result itself. And, had the matter been confined within the publi-

cations of the society, nothing could have been said. But a friend of Sir W. Huggins, who saw the first part of the paper before it was officially received at the society, struck with its great importance, and knowing the willingness with which you, Sir, to the great benefit of the public, publish in your columns early notices of striking scientific discoveries, sent you a communication on the subject which you were good enough to print. 'Inquirer' complains that no similar communication concerning the notable addition to the first part of the paper has appeared. May I venture to point out that, in the absence of any organized arrangements, gaps, such as the above, in the scientific information which you publish are for one reason or another liable to occur without anybody being to blame?

SOME rare lizards have been deposited by Mr. Walter Rothschild, in the London Zoological Garden. According to the London *Times* his specimens of the Cuban anolis (*Anolis equestris*) are the first received alive in Great Britain, though the species has been known for nearly 200 years. Sir Hans Sloane was the first to describe it, from specimens obtained in Jamaica, and he compared it to a small iguana with a short comb or crest on the back, and a very long tail. The general color of the upper surface is bluish green, and of the under surface pale green—a color-scheme which is no doubt protective, and a later observer says that the reptile is scarcely distinguishable among the foliage of the trees on which it lives. The throat-pouch is of a deep pink, and, when inflated, gives the animal a very striking appearance. In the same cage is a chameleon lizard (*Chamaeleolis chamaeleontides*), from Cuba, also exhibited for the first time. As one would imagine, from the scientific names, there is a superficial resemblance to the chameleon; this is very strongly marked in the head and in the shagreen-like tubercles covering the body. The general hue is ashy brown, with rufous markings, and the throat-pouch is tinged with purple. The arrival of this specimen removes the doubt expressed by some writers as to whether the loose skin of

the throat could be inflated, for it is distended whenever the animal is excited. Late last year the scale-footed lizard (*Pygopus lepidopus*) was represented for the first time in the collection. Other specimens have recently been put out. In some respects these limbless lizards from the Australian region have a general resemblance to the British slow-worm, but the tail is exceedingly long and tapering, and the hind limbs are represented by two scale-like flaps of skin, closely adpressed to the side. These can be moved at will and contain the vestiges of the toe bones, which can be felt between the finger and thumb. In the sloths' house is an example of the Australian spiny anteater (*Echidna aculeata*), with the exception of the duck-billed platypus the lowliest of all mammals. It may be compared in appearance to a hedgehog, with long, strong spines and a beak-like snout about as long as that of the platypus, but tubular in shape. Its popular name is correct, so far as regards its food, which is obtained by the protrusion of the worm-like tongue, as is the case with the great anteater (*Myrmecophaga jubata*) of South America, examples of which are in the same house. There is, however, no close relationship, the former laying eggs, and having traces of a marsupial pouch, while the latter is a true mammal. Many authors reckon three species of spiny anteaters, according as there is more or less hair mixed with the spines, while others attribute this difference to the effect of the climate of Tasmania and New Guinea (where the more hairy forms occur) and claim that the examination of a large series of skins shows that the extremes grade into each other.

ENGLISH papers state that steps have been taken to begin immediately the construction of the section of the Cape-to-Cairo Railway between Wankie and the Zambesi at Victoria Falls and that 2,500 laborers will at once commence work on this section. Railhead will be at Wankie, about 200 miles northwest of Bulawayo, very shortly. With regard to other railways in Rhodesia, on the branch line between Bulawayo and Gwanda 31½ miles of rail have been laid of a total length of 104

miles. The Selukwe line will be finished at an early date, as the rails have already reached a point 16 miles from Gwelo and sufficient material is now on the spot for the completion of the branch. The removal of the light rails on the Vryburg-Mafeking section is rapidly proceeding, and, according to the latest advices, 42 miles out of the total 96 had been relaid with 60-pound rails.

UNIVERSITY AND EDUCATIONAL NEWS.

THE Imperial Chinese University at Peking which abandoned its attempt to introduce European learning under the retrograde policy of the Dowager Empress has now been closed.

PROFESSOR J. MARK BALDWIN, of Princeton University, has been called to a new chair in philosophy and psychology in the Johns Hopkins University, where it is proposed to organize a university department in these subjects. Professor Baldwin will immediately enter upon his new duties, but it is expected that he will also give during the coming term certain senior and graduate courses at Princeton, where he may be addressed.

DR. E. W. SCRIPTURE, assistant professor of experimental psychology at Yale University, has resigned and is succeeded by Dr. Charles H. Judd, A.B. (Wesleyan), Ph.D. (Leipzig). Dr. Scripture is spending the year at Leipzig, where he is carrying on researches on the analysis of speech by means of gramophone records under the auspices of the Carnegie Institution.

DR. JOHN G. CURTIS, professor of physiology at the College of Physicians and Surgeons of Columbia University, has been elected acting dean of the college.

DR. AUGUSTUS POHLMAN has been appointed assistant professor of anatomy at the Johns Hopkins University.

At Leland Stanford Junior University, Dr. Edward C. Franklin, of the University of Kansas, has been appointed associate professor of organic chemistry, and Dr. J. R. Slonaker, of the University of Chicago, has been appointed assistant professor of physiology.

M. LEBOEUF has been appointed professor of astronomy at the University of Besançon.